Complete Summary

GUIDELINE TITLE

Specialty referral guidelines for people with diabetes.

BIBLIOGRAPHIC SOURCE(S)

Diabetes Treatment Centers of America. Specialty referral guidelines for people with diabetes. Version 2. Nashville (TN): Diabetes Treatment Centers of America; 1999. 22 p. [14 references]

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Diabetes Mellitus

GUIDELINE CATEGORY

Diagnosis
Prevention
Risk Assessment

CLINICAL SPECIALTY

Internal Medicine
Preventive Medicine

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

- To provide a new and revised edition of guidelines.
- To provide physicians who provide primary care to persons with diabetes with a set of clinical thresholds that indicate the need for additional professional input.

TARGET POPULATION

Persons with Type 1 or Type 2 diabetes mellitus

INTERVENTIONS AND PRACTICES CONSIDERED

Clinical thresholds, defined in the general areas of history, physical examination and laboratory/diagnostics, which indicate the need for professional referral.

MAJOR OUTCOMES CONSIDERED

Morbidity and mortality associated with diabetes mellitus.

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

Studies have demonstrated the enormity of the cost involved in providing care to the diabetes population and that diabetes consumes resources to a degree unsupported by outcomes of care.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The guideline panel's initial recommendations were submitted for review by the American Healthways, Inc. (formerly the Diabetes Treatment Centers of America [DTCA]) Scientific Advisory Council and to a panel of selected faculty specialists at the Vanderbilt University Medical Center. Finally, the guidelines were modified and endorsed by a Consensus Conference of over 100 physicians with similar varied perspectives convened by American Healthways, Inc. at Rancho Mirage, California in November, 1997.

The content of the new sections in this edition was reviewed and approved for inclusion by the American Healthways, Inc. Medical and Scientific Advisory Councils. In addition, the expert panel reviewed the small number of suggestions for changes submitted by individuals who had received Version 1. Where appropriate, these changes have also been included in the new edition.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The following referral guidelines present physicians who provide primary care to persons with diabetes with a set of clinical thresholds which indicate the need for additional professional input.

CARDIOLOGY

Management Objectives

To prevent the onset or progression of coronary artery disease, silent ischemia, hypertension, congestive heart failure and hyperlipidemia

History

1. Men > 40 years old, women > 50 years old*
2. Myocardial infarction, acute or previous.
3. Symptoms suggesting ischemia or unexplained fatigue or dyspnea.
4. Symptoms or history of congestive heart failure.
5. Unexplained syncope.
6. Cerebral vascular accident (CVA) or peripheral vascular disease.

* Earlier evaluation may be indicated for individuals with additional risk factors:

1. Diabetes > 10 years duration
2. Pending major surgery
3. Positive Risk Factors: Age, family history, smoking, hypertension, low HDL cholesterol
   Negative Risk Factors: High HDL cholesterol

Physical Exam

1. Signs of congestive heart failure.
2. Arrhythmia.
3. Average blood pressure over 12 months indicating uncontrolled hypertension (systolic $\geq$ 130 or diastolic $\geq$ 85) over 12 months.
4. Any other indication of autonomic neuropathy that might imply cardiac denervation and associated silent ischemia (unexplained resting tachycardia and/or orthostatic hypotension).

Laboratory/Diagnostics

1. Significant ECG findings or abnormal echocardiogram.
2. Cardiomegaly or congestive heart failure by chest x-ray.

DIABETES/METABOLIC

Management Objectives

Optimal metabolic control fasting and pre-prandial capillary self blood glucose monitor[1] 80 - $\leq$ 120 mg/dL; Hgb A1c $\leq$ 7.0; LDL < 100 mg/dL; and fasting triglycerides < 200. HDL > 35 for men and > 45 for women.

[1] Keep in mind that there is some variation in self blood glucose monitors for various reasons.

History

1. Any Type 1 patient at time of diagnosis.
2. Hypoglycemia resulting in seizure or requiring emergency intervention (glucagon, ER, 911) twice in 6 months.

3. Frequent hypoglycemia.
4. Hypoglycemic unawareness--documented hypoglycemia in the absence of adrenergic symptoms (sweating, nervousness, etc.)
5. Diabetic ketoacidosis (DKA) twice in a year.
6. Hyperosmolar non-ketotic coma.
7. Patient for initiation and continuing management of insulin pump therapy.
8. Patient requiring pre-conception counseling.
9. Pregnancy: Type 1, Type 2, or gestational.
10. Systemic cortico-steroid or other medication associated with deterioration of diabetes control.
11. Development and/or progression of a diabetic complication.

Physical Exam

1. Average blood pressure over 12 months indicating uncontrolled hypertension (systolic $\geq$ 130 or diastolic $\geq$ 85) over 12 months.

Laboratory/Diagnostics

1. Hgb A1c > 8.0 for over one year.
2. Microalbuminuria > 30 mg/gm Cr and doubling over one year.
3. LDL $\geq$ 130, HDL $\leq$ 35 for men, and $\leq$ 45 for women, fasting triglyceride $\geq$ 400 mg/dL (unable to reach NCEP guidelines for one year).

Note: In identifying a specialist for referral with respect to this guideline, consideration should be given to primary care physicians with a special interest in diabetes who have access to, and the support of, a comprehensive diabetes management program.

EDUCATION

Management Objectives

Motivate, educate and encourage diabetes self-management to optimize metabolic control and prevent complications through partnerships with a team of health care professionals.

History[1]

1. All people with diabetes at the time of diagnosis.
2. During or following hospitalization or surgery.
3. Patient's failing to achieve or maintain optimal glycemic control*.
4. Preconception and during pregnancy.
5. Patient request.
6. Initiation of insulin or pump therapy or other significant change in regimen.

[1] Patients with diabetes should not encounter artifical barriers to access for diabetes education. Accordingly, diabetes education should be available on a regular or as needed basis.

* Fasting and pre-prandial BS ≤ 120 mg/dL; Hgb A1c ≤ 7.0; frequent hypoglycemia.

Physical Exam

1. BMI ≥ 27.
2. Loss of protective sensation as evidenced by 10 gm monofilament testing.

Laboratory/Diagnostics

1. Suboptimal glycemic control*.
2. Triglycerides: ≥ 200 over 6 months.
3. LDL > 100 (over 6 months).
4. Proteinuria: > 300 mg/24 hours.
5. Creatinine clearance < 50 cc/minute.

* Fasting and pre-prandial BS ≤ 120 mg/dL; Hgb A1c ≤ 7.0; frequent hypoglycemia.

FOOT CARE

Management Objectives

1. Prevent the development of foot ulcers.
2. Promote limb salvage.

History

1. History of foot ulcer, other foot lesion or amputation.
2. History or recurrent lower extremity cellulitis.
3. Patient/care-giver unable to safely provide care of the feet.
4. Impaired healing of lower extremity.

Physical Exam

1. Foot or lower extremity ulcer.
2. Severe nail deformities.
3. Loss of protective sensation as evidenced by 10-gram monofilament testing.
4. Any signs of deep infection.
5. Cellus formation, especially any callus showing hemorrhagic change.
6. Foot deformity or amputation.
7. Refractory edema.
8. Absent peripheral pulses.

Laboratory/Diagnostics

Radiographic evidence of neuroarthropathic bone changes, and/or osteomyelitis.

INFECTIOUS DISEASES

Management Objectives

Elimination of infections and prevention of complication(s).

History

1. Severe and non-responsive infection(s).
2. Specific infections:
    - Osteomyelitis
    - Necrotic or gangrenous wounds
    - Necrotizing fasciitis
    - Malignant otitis externa
    - Epidural abscess
    - Nasal mucormycosis
    - Recurrent monilial infections

Physical Exam

Laboratory/Diagnostics

NEPHROLOGY

Management Objectives

1. Prevent or delay the progression of diabetic nephropathy.
2. Manage end stage renal disease.

History

Physical Exam

1. Average blood pressure over 12 months indicating uncontrolled hypertension (systolic $\geq$ 130 or diastolic $\geq$ 85) over 12 months.
2. Upper abdominal bruit and hypertension.

Laboratory/Diagnostics

All results confirmed by repeat test on separate day.

1. Microalbuminuria > 30 mg per Gram of creatinine (or > 30 mg/24 hours) and doubling within one year.
2. Serum creatinine > 2.0 mg/dl* or greater than 50% increase in levels within one year to a level exceeding the upper limit of normal.
3. Creatinine clearance < 50 cc/minute.
4. Proteinuria: > 300mg/24 hours or > 30 mg/dl.
5. Hyperkalemia or persistent metabolic acidosis.

* Per American Diabetes Association (ADA) guidelines for creatinine.

NEUROLOGY

Management Objectives

1. Prevent and/or delay progression of somatic and/or autonomic neuropathy.
2. Improve the management of cerebrovascular.

History

1. Persistent paraesthesias, hypoesthesias, hyperesthesias, gait disturbance, neuropathic pain.
2. Any motor neuropathy.
3. Acute or previous cerebral vascular accident (CVA) or transischemic attack (TIA) and no history of neurologic work-up.

Physical Exam

1. Any neurologic deficits suggesting a mono/polyneuropathy, or myelopathy or myopathy.
2. Motor neuropathy.
3. Progressive weakness, ataxia or gait disturbance.

Laboratory/Diagnostic

Abnormal EEG, CT, MRI or other neurodiagnostics.

OPHTHALMOLOGY

Management Objectives

Prevent or retard the progression of diabetic retinopathy*, and diagnose and manage glaucoma.

History

1. Any acute change of vision.
2. Type 2 diabetes.*
3. Post-pubescent with 5-year history of Type 1 diabetes.*
4. Pregnancy of known diabetic.

* Required annual dilated retinal exam with intra ocular pressure measurement as per ADA guidelines (by optometrist or ophthalmologist).

Physical Exam

1. Any retinal change

Laboratory/Diagnostics

PEDIATRICS

Management Objectives

1. To assure the safe and effective management of the child or adolescent with diabetes, so as to avoid or forestall the acute and chronic complications of the disease.
2. To recognize and appropriately address the problems that are unique to this subset of the diabetes population.

History

1. Failure to maintain normal growth and weight.
2. Failure to meet the accepted pediatric developmental milestones.
3. Frequent or severe hypoglycemia or ketoacidosis.
4. Frequent intercurrent illness severe enough to effectively disrupt diabetes management.
5. Excessive absenteeism or other adjustment problems at school.
6. More than one serious infection in one year (e.g., meningitis, osteomyelitis, pneumonia, sepsis).
7. Difficulty in satisfactorily managing diabetes while participating in athletics.
8. Depression, suicidal ideation or gestures, substance abuse, or eating disorder.

Physical Exam

1. Failure to maintain growth between the 5th and 95th percentiles of standard growth charts and/or to sustain growth parallel to the standard slope of the charts.
2. Height and/or weight outside 5th - 95th percentile on standard growth chart (adjust for mean parental height).
3. Acceleration or deceleration of height or weight over time so as to cross two or more lines on standard growth chart.

Laboratory/Diagnostics

1. Hgb A1c > 8.0 for over one year.
2. Microalbuminuria > 30 mg/gm Cr and doubling over 1 year.
3. LDL $\geq$ 130, HDL $\leq$ 35 for men and $\leq$ 45 for women, fasting triglyceride $\geq$ 400 mg/dL (unable to reach NCEP guidelines for one year).

PREGNANCY[1]

Management Objectives

1. Fasting capillary self blood glucose monitor 60 - 90 mg/dL, < 90 mg/dL and one hour pp $\leq$ 120; Hgb A1c $\leq$ 7%.
2. Early detection and management of maternal and fetal complications.

History[2]

1. Frequent hypoglycemia.
2. Pre-existing eye, kidney, or heart complications.
3. A dilated retinal exam within the previous six months.

Physical Exam

1. Pregnancy-induced hypertension (120/60, or above pre-pregnancy in normotensive females).
2. Inappropriate fetal growth.

Laboratory/Diagnostics

1. Positive urine ketones.
2. Protein > 300 mg/24 hours (1st trimester).
3. Hgb A1c > 7%.
4. Glucose > 90 mg/dL fasting, > 120 mg/dl one hour pp, or glucose consistently above recommended ranges.
5. Abnormal non-stress tests.
6. Abnormal ultrasound.

[1] Pregnancy and diabetes presents a unique and high risk medical condition which requires a multi-disciplinary team approach.

[2] The medical history for a woman with diabetes contemplating pregnancy should include evidence of pre-pregnancy counseling.

PSYCHO-SOCIAL

Management Objectives

Early detection and treatment of psychosocial conditions to prevent disruption of glycemic control.

History

1. Eating disorders.
2. Depression.
3. Substance Abuse.
4. Multiple hospital admissions with primary diagnosis of uncontrolled diabetes.
5. Anxiety disorders.
6. High levels of family conflict.

Physical Exam

1. Depressed mood.
2. Abnormal mental status exam.
3. Rapid weight fluctuation.
4. Factitious disease
5. Loss of dental enamel.

Laboratory/Diagnostics

1. Positive drug screens.
2. Abnormal psychological screening results.

Note: Patients with diabetes have been shown to have a higher prevalence of concomitant psychiatric illnesses and the primary physician is therefore encouraged to actively evaluate the patient's psycho-social condition.

UROLOGY

Management Objective

Assist with diagnosis and treatment of refractory bladder or erectile dysfunction.

History

1. Urinary incontinence (other than minor stress incontinence).
2. Recurrent pyelonephritis/cystitis.
3. Erectile dysfunction.
4. Urinary retention.

Physical Exam

Laboratory / Diagnostics

VASCULAR

Management Objective

Prevent or delay the consequences of peripheral vascular disease.*

History

1. Claudication (vascular).
2. Suspected renal or mesenteric ischemia.
3. Transischemic attach (TIA) or amaurosis fugax.

Physical Exam

1. Diminished or absent peripheral pulses, with associated cyanotic or ischemic foot.
2. Non-healing limb wound.
3. Differential UE blood pressures $\geq$ 20 mmHg.
4. Carotid bruit.

Laboratory / Diagnostics

1. Carotid stenosis $\geq$ 70% or ulcerative plaque.
2. Ankle-brachial index < 0.5.
3. Abnormal LE Doppler/Duplex with symptoms.

* The diagnosis of peripheral vascular disease should serve as an indicator to evaluate for coronary artery disease.

WOMEN'S HEALTH

Management Objectives

Meet the unique health care needs of women with diabetes.

History

1. Patient requiring pre-conception counseling
2. Pregnancy: Type 1, Type 2, or gestational
3. Recurrent erratic control associated with menses or menopause.
4. Eating disorder.

Physical Exam

1. Recurrent monilial vaginitis.
2. Hirsutism.*

Laboratory/Diagnostics

1. Positive pregnancy test.

* Sometimes indicative of insulin resistance syndrome

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

Not stated

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Prevention of serious morbidity or death due to complications from diabetes mellitus.

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

Variations from these guidelines are always acceptable if in the opinion of the attending physician, individual circumstances require it.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Since the publication of Version 1 of the Guidelines in January, 1998, American Healthways, Inc. (formerly the Diabetes Treatment Centers of America [DTCA]) has distributed over 10,000 copies to physicians, hospitals, and health plans across the country.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness
Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Diabetes Treatment Centers of America. Specialty referral guidelines for people with diabetes. Version 2. Nashville (TN): Diabetes Treatment Centers of America; 1999. 22 p. [14 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1998 (revised 1999)

GUIDELINE DEVELOPER(S)

American Healthways, Inc - Public For Profit Organization

GUIDELINE DEVELOPER COMMENT

American Healthways, Inc. (formerly the Diabetes Treatment Centers of America [DTCA]) assembled a panel of primary care and specialty physicians representing

private practice, health plan, and institutional perspectives. These guidelines have been modified and endorsed by a Consensus Conference of over 100 physicians convened by American Healthways, Inc. at Rancho Mirage, California in November 1997.

The development of three new sections in this edition of the Guidelines was guided by the same expert panel of primary care and specialty physicians who were responsible for the development of Version 1. The content of the new sections was then reviewed and approved for inclusion by American Healthways, Inc.'s Medical and Scientific Advisory Councils.

SOURCE(S) OF FUNDING

American Healthways, Inc. (formerly the Diabetes Treatment Centers of America [DTCA])

GUIDELINE COMMITTEE

Referral Guidelines Steering Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Members of the Guidelines Steering Committee: Paul Davidson, MD; Charles Booras, MD; Frank DiTirro, MD, PhD; Cheryl Black, MD; Norman Stein, MD; David Swieskowski, MD; Robert Sevier, MD.

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline. It is an update of a previously issued version (Specialty referral guidelines for people with diabetes. Nashville [TN]: American Healthways, Inc.; 1998. 18 p.)

This document represents the most current version of the guideline available to date. The Specialty Referral Guidelines Council, American Healthways, Inc. expects to issue updated versions of this guideline on the basis of additional physician input and feedback, changes in medical practice and changes in standards of care for this population.

GUIDELINE AVAILABILITY

Electronic copies: Not available at this time.

Print copies: Available from the American Healthways, Inc., 3841 Green Hills Village Drive, #300, Nashville, TN 37215.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Inpatient management guidelines for people with diabetes. Nashville (TN): American Healthways, Inc.; 1999. 18 p.

Print copies: Available from American Healthways, Inc., 3841 Green Hills Village Drive, #300, Nashville, TN 37215.

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on August 23, 1999. The information was verified by the guideline developer on August 23, 1999.

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